

NATIONAL REPORT OF THE REPUBLIC OF PARAGUAY, ACCORDING TO THE PROVISIONS OF THE JOINT CONVENTION ON THE SAFETY OF SPENT FUEL MANAGEMENT AND ON THE SAFETY OF RADIOACTIVE WASTE MANAGEMENT;

Dear representatives of the Member States:

INTRODUCTION;

As the entity responsible for the regulation of the peaceful use of atomic energy and ionizing radiation, the Radiological and Nuclear Regulatory Authority (ARRN) submits this National Report, in accordance with the provisions of Article 32 of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, ratified by law 6,064 of 2018.

It should be noted that the country does not currently have, nor has it had in the past, nuclear facilities. In addition, the bellicose use of this energy is prohibited by Article 8 of the National Constitution, the country being a party to the Treaty for the Prohibition of Nuclear Weapons (TPNW), which was ratified on January 23, 2020.

Therefore, this report is limited to the actions taken in relation to the safe management of radioactive waste from practices of peaceful use, as the articles referring to spent fuel or its transportation are not applicable at the moment.

Section E. Legislative and Regulatory System

10. This section covers the obligations under the following articles:

Article 18. Implementing measures

Article 19. Legislative and regulatory framework

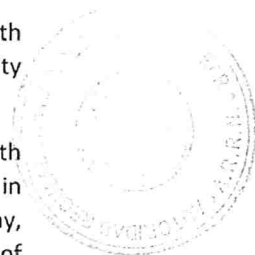
Article 20. Regulatory body

The ARRN.

Law 5169/2014 represented the transition in the country from a dual regulatory system to an individual one. Indeed, before this law there were two regulatory entities with complementary competencies; On the one hand, the Ministry of Public Health and Social Welfare (MSPyBS), with competence in all practices that involve ionizing radiation related to medicine, and on the other, the Atomic Energy Commission (CNEA) dependent on the National University of Asunción (UNA), although in its beginnings, as happened in several countries, it depended on the Ministry of Foreign Affairs (MRE), with competence to regulate the practices related to the industrial applications of this technology, as well as scientific research.

This dual system was not exempt from criticism from the IAEA, since the MSPyBS was both regulatory and regulated, with an evident conflict of interest, and the CNEA lacked enforceability to apply its decisions, as it was an academic body.

In complete break with this system, the ARRN was created as the sole Regulatory Entity, with competence in Technological Security, Physical Security and Nuclear Safeguards, as well as in matters of advice on Civil Liability for Nuclear Accidents. His legal status and his own patrimony, added to his direct relationship with the Executive Power, in addition to the protocol rank of Minister recognized to the Executive Secretary, marked a transcendental milestone in terms of



the advancement of nuclear and ionizing radiation regulation not only in the country, but also recognized regionally and internationally.

The power to dictate and approve its own regulations, without depending on Ministries or other governmental bodies with interests that are not always related, made the systemic reform operated by the new law seen as absolutely advanced, gathering concepts of the most modern legislative trend. and of the model law itself, of the IAEA.

Regulatory framework

The improvement of the legislative infrastructure through the enactment of new norms, updated according to the most recent recommendations of the International Organization, has been a priority of the Regulatory Entity since its inception.

As a consequence, a series of new regulations have been issued that cover the different areas of regulation, the following being those related to this report:

Res. D-ARRN N ° 26/2016 BY WHICH THE BASIC REGULATION OF RADIOLOGICAL PROTECTION AND SAFETY OF RADIATION SOURCES IS MODIFIED.

REGULATION FOR THE SAFE MANAGEMENT OF DISUSED RADIOACTIVE SOURCES AND RADIOACTIVE WASTE

RESOLUTION D-ARRN- No. 012/2020, BY WHICH THE POLICY AND STRATEGY FOR THE MANAGEMENT AND SAFE STORAGE OF RADIOACTIVE WASTE AND SEALED SOURCES IS APPROVED.

Res. D-ARRN N ° 23/2016 BY WHICH THE SPECIFIC REGULATION FOR THE SAFE TRANSPORTATION OF IONIZING RADIATION SOURCES IS APPROVED.

Section H. Safety of Radioactive Waste Management

1. In accordance with the provisions of Article 30, each Contracting Party shall submit a

national report to each review meeting of Contracting Parties. This report shall address the measures taken to implement each of the obligations of the Convention. For each Contracting Party the report shall also address its:

- (i) spent fuel management policy;*
-Not applicable-
- (ii) spent fuel management practices;*
-Not applicable-
- (iii) radioactive waste management policy;*

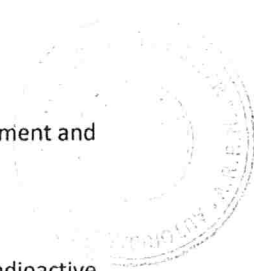
RESOLUTION D-ARRN- N° 012/2020, by which the Policy and Strategy for the Management and Safe Storage of Radioactive Waste and Sealed Sources is approved.

- (iv) radioactive waste management practices;*

The country has 2 (two) facilities authorized as a Temporary Warehouse for Disused Radioactive Sources.

1) Disused Source Management Laboratory (LaGeFuDe -Acronym in Spanish) of the National Atomic Energy Commission of the National University of Asunción.

2) National Cancer Institute (INCAN)



- (v) *criteria used to define and categorize radioactive waste.*

Established in CHAPTER IV, Article 8 of the Regulation for the safe management of disused radioactive sources and radioactive waste.

CHAPTER IV: CLASSIFICATION OF RADIOACTIVE WASTE

Article 8.- Radioactive waste classification system.

For the purposes of these Regulations and to facilitate decisions to be taken in relation to the medium and long-term management of radioactive waste, five classes of radioactive waste are established, which take into account the criteria established by international recommendations, as follows;

- a) Very short half-life wastes (DVMMC -Spanish acronym-): Wastes that must be stored for decay for a limited period of up to a few years, to be subsequently released from regulatory control in accordance with the provisions approved by the Radiological and Nuclear Regulatory Authority (ARRN) and managed by not controlled disposal, use, or download. This class includes wastes containing radionuclides with a very short half-life such as those often used for medical and research purposes.
- b) Very low activity waste (DAMB): Radioactive waste that, even when exceeding the dispensing levels, does not require a high level of isolation and containment, so it can be disposed of in landfill-type surface disposal facilities with a reduced regulatory control, in which other hazardous wastes could also be placed. Wastes in this class can be contaminated soil or debris with low levels of activity concentration. Generally, the concentrations of long half-life radionuclides in this class of wastes are very limited.
- c) Low Activity Wastes (DAB): Wastes containing limited amounts of long half-life radionuclides. These wastes require a high level of isolation and containment for periods of up to several hundred years and are suitable for final disposal in surface facilities. This class covers a wide spectrum of wastes. It may include materials contaminated with high concentrations of short half-life radionuclide activity, as well as wastes contaminated with long half-life radionuclides, but with low activity concentrations.
- d) Intermediate activity wastes (DAI): Wastes that due to their content of radionuclides, particularly those with a long half-life, require a higher degree of isolation and containment than what a surface disposal facility can provide. However, these wastes do not require, or may require in a very limited way, that measures be taken during their storage and final disposal to control the release of the heat they generate. These wastes may contain long half-life radionuclides, in particular alpha emitters, which do not decay during the time that their institutional control can be guaranteed to acceptable levels of activity concentration that could allow their final disposal in surface facilities. Therefore, these wastes must be disposed of at greater depths, in the range from tens of meters to several hundred meters.
- e) High-level waste (DAA): Waste with activity concentrations high enough to generate significant amounts of heat due to radioactive decay processes, or waste contaminated with large amounts of long half-life radionuclides, such that they need to be considered in the design of the facility planned for its final disposal. The generally recognized option for such debris is disposal in deep, stable geological formations, usually at depths below the surface of several hundred meters or more.



At different stages of waste management, users in charge of management activities can establish, for practical purposes, other classification systems (eg "compact solid waste" or "liquid organic waste", etc.). However, these classification systems will have a specific internal character for the activities that are developed and do not replace the classification described above.

2. This report shall also include:

- (i) a list of the spent fuel management facilities subject to this Convention, their location, main purpose and essential features;*
- (ii) an inventory of spent fuel that is subject to this Convention and that is being held in storage and of that which has been disposed of. This inventory shall contain a description of the material and, if available, give information on its mass and its total activity;*
- (iii) a list of the radioactive waste management facilities subject to this Convention, their location, main purpose and essential features;*

The country has 2 (two) facilities authorized as a Temporary Warehouse for Disused Radioactive Sources.

1) Disused Source Management Laboratory (LaGeFuDe) of the National Atomic Energy Commission of the National University of Asunción.

Location: Ruta Mcal. Estigarribia Km 11 - UNA University Campus, San Lorenzo-Paraguay

The purpose of this disused source warehouse is to centralize all the disused sources in the country until definitive storage is achieved.

2) National Cancer Institute (INCAN), has a temporary warehouse for disused radioactive sources, authorized by the ARR.N.

Location: Ramal Km 23.5 Ruta II, Capiatá - Paraguay.

The purpose of this transitory warehouse is to keep disused sources in safe conditions until definitive storage is achieved.

- (iv) an inventory of radioactive waste that is subject to this Convention that:*
 - (a) is being held in storage at radioactive waste management and nuclear fuel cycle facilities;*
 - (b) has been disposed of; or*
 - (c) has resulted from past practices.*

This inventory shall contain a description of the material and other appropriate information available, such as volume or mass, activity and specific radionuclides;

We submit the inventory as an attachment.

- (vi) a list of nuclear facilities in the process of being decommissioned and the status of decommissioning activities at those facilities.*
 - Not applicable -

END OF THE REPORT

